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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,219	07/06/2001	Minoru Akita	210767US2	3567
22850	7590	11/07/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER PARK, JUNG H	
			ART UNIT 2661	PAPER NUMBER

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/899,219

Applicant(s)

AKITA ET AL.



Examiner

Jung Park

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,8 and 11-30 is/are allowed.
- 6) ☒ Claim(s) 1,4-7,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2, 3 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### **Abstract Objections**

1. The abstract of the disclosure is objected to because applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

The abstract is too long (more than 230 words).

Correction is required. See MPEP § 608.01(b).

### **Specification**

2. The disclosure is objected to because of the following informalities:

The title of the invention is not descriptive and too long. A new title is required that is clearly indicative of the invention to which the claims are directed.

Appropriate correction is required.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1, 4, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barkley et al. (US 6,389,493, "Barkley") in view of Zimmerman et al. (US Pub. 2004/0213197, "Zimmerman").

Regarding claims 1, 9, and 10, Barkley discloses the communication control devices of claims 1 and 9 and the method of claim 10. Barkley discloses, "a communication control device[s and a method] comprising:

- a slot allocation information inserting unit (*control unit 120 fig.1; col. 6, lines 14-15 where bandwidth information*) for determining slot allocation information (*where determined for generating*) indicating the allocation of slots of an upward signal (*col. 6, lines 10-11*) to each child station device (*slave card 116a-c fig.1*) and inserting the slot allocation information (*col. 6, lines 14-16 where inserting the allocated information*) of the child station devices into a downward signal (*col. 5, lines 39-42*).

- a slot allocation information storing unit (*memory 124 fig.1*) for storing the slot allocation information (*col. 6, lines 18-19*) determined in the slot allocation information inserting unit; and

- a slot allocation changing unit (*120 fig.1*) for changing the slot allocation information of the child station devices (*col. 7, lines 28-33*) determined by the slot allocation information inserting unit according to the estimation of the traffic volume obtained in the traffic estimating unit."

Barkley fails to teach the detecting and estimating units. However, Zimmerman discloses a traffic estimating unit (*not shown unit in 114 fig.1*) for detecting the existence of the upward packets (*frame in fig.2*) and then estimating a traffic volume of upward packets (*p.14, par.142 where need to detect the traffic data for estimation*) sent from the child station device in a future time (*observed traffic in a future time*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include the traffic detecting and estimating methods taught by

Zimmerman into the bandwidth allocation method of Barkley. The motivation of including the traffic estimation method is to detect the existence of the upward packets corresponding to the bandwidth allocation information of each slave device stored in the bandwidth allocation information and then estimate for optimal bandwidth allocation.

Regarding claim 4, Barkley and Zimmerman are silent on a periodic change of the traffic volume that is estimated by the packet checking unit.

However, at the time of the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to estimate the traffic volume periodically or randomly. The motivation of estimating the periodic change of the traffic volume is to accurately estimate the traffic volume for appropriate allocation of bandwidth.

5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barkley in view of Zimmerman and further in view of Lee et al. (US 5,430,732, "Lee").

Regarding claim 5, Barkley and Zimmerman fail to teach the sharing of the surplus bandwidth to each child station.

However, Lee discloses that slots corresponding to a minimum transmission bandwidth (col. 3, lines 53-55) of each child station device (active station) is allocated to the child station device by the slot allocation changing unit (controller 13 figure 1), and a surplus transmission bandwidth (col. 3, line 57) is given to one child station device or is shared among the child station devices (col. 3, lines 59-61) by the slot allocation changing unit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include the sharing method to each active station taught by Lee into the slot allocation control device disclosed by Barkley and Zimmerman since one would be

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motivated to include the sharing method in order to properly allocate the available bandwidth to each child station for conserving the expensive resource.

Regarding claim 6, Lee discloses that the minimum bandwidth is initially allocated (col. 3, line 56) to child station devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include the minimum initial allocation method taught by Lee into the slot allocation control device disclosed by Barkley and Zimmerman since one would be motivated to allocate the minimum bandwidth initially in order to equally share out the bandwidth to child stations.

Regarding claim 7, Lee discloses that the surplus transmission bandwidth is shared at a prescribed proportion (col. 3, line 61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include the proportional allocation method taught by Lee into the slot allocation control device disclosed by Barkley and Zimmerman since one would be motivated to allocate the available bandwidth proportionally in order to fulfill the required bandwidth of each child station based on the estimation.

#### **Allowable Subject Matter**

6. Claim 11-30 is allowed.

7. Claims 2, 3, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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**Conclusion**

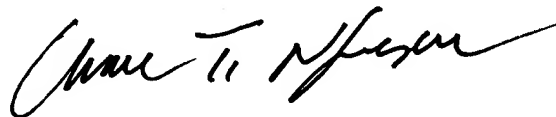
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 7:10-4:40.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP

Jung Park  
Patent Examiner  
Art Unit 2661  
November 1, 2005



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